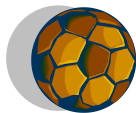


Name _____

Science / Hour _____

Date _____

Introduction to the Scientific Method – Bouncing Balls Lab



LAB: BOUNCING BALLS AT DIFFERENT HEIGHTS



QUESTION: How does the height from which you drop a ball affect the height that it will bounce?

What is the effect of the _____ (I.V.) _____ on the _____ (D.V.) _____ ?
How does the _____ (I.V.) _____ affect the _____ (D.V.) _____ ?

HYPOTHESIS: – I think if a ball is dropped from a greater height then

I think this because _____

EXPERIMENT PLAN / PROCEDURE:

VARIABLES

- INDEPENDENT VARIABLE (the variable you are changing) _____

- DEPENDENT VARIABLE (the measurement variable) _____

- CONSTANTS (the variables you will keep the same) _____

INDEPENDENT VARIABLE – this is the variable that is purposely changed in an experiment. You change this variable to see if it makes a difference. A well designed experiment will have only one independent variable.

DEPENDENT VARIABLE – this is what will be observed and measured in the experiment. This is called your measurement variable that tells/measures the difference the independent variable makes. This responding variable responds to the change you made in the independent variable.

CONSTANTS VARIABLES – these are the variables that remain constant throughout the entire experiment in order for a fair test to occur.

Name _____
 Science / Hour _____
 Date _____

Materials:

_____, _____, _____,
 _____.

Procedure

1. Gather your materials.
2. In groups of 4, divide the activities so that 1) one student drops the ball, 2) one student watches the bounce and estimates the height to which it bounces, 3) one student measures the height of the bounce, and 4) one student records the data.
3. Determine the height of the drop and the bounce by measuring from the bottom of the ball.
4. Drop a ball from 50 cm and record how high it bounces. The height to which the ball bounces is to be estimated as carefully as possible.
5. Repeat steps 3 and 4 but change the drop height to 100cm, 150 cm and 200 cm
6. Repeat steps 3-5 two more times so you have three trials of data collected.
7. Find the mean (average) of the three trials and use the mean to graph.
8. Clean up your work station and replace your supplies.

COLLECTING DATA:

Effect of Bounce Height on Drop Height of a Ball

Drop Height (cm) (independent variable)	Bounce Height (cm) (dependent variable)				
	Trial # 1	Trial # 2	Trial # 3	Total	Average
50					
100					
150					
200					

Qualitative Observations _____

Your Chart /Table should include:

- a title that describes the data in the table
- an independent variable (the variable you change)
- a dependent variable (the measurement variable)
- units should be displayed in column/row headings only
- missing values displayed as -, and zeros as 0

IV					

	DV					

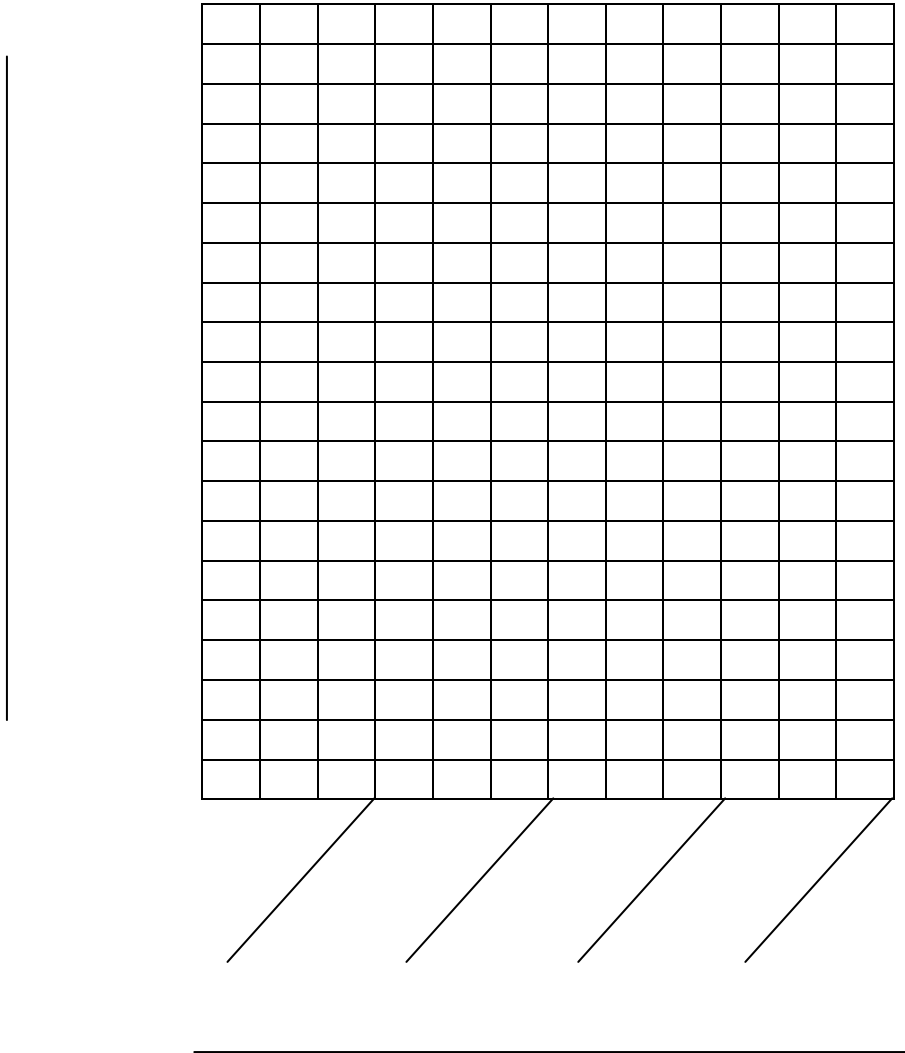
Name _____

Science / Hour _____

Date _____

Conclusion:

Effect of Bounce Height on Drop Height of a Ball



(RULES FOR GRAPHS) T-A-L-K-N

- Include a **title** (be specific and capitalize))
- **Averages** or **mean** need to be graphed, not the trials and totals
- **Label the x and y axis** –Independent variable goes on x axis (horizontal) and dependent variable on y axis (vertical) make sure to include measurement units
- **Key** should be included if necessary
- **Number the lines** in equal/even intervals, not the spaces on the y axis

Name _____

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Date _____

Describe the data:

1. What is the numerical range of the data?
2. What is the graph telling you?
3. What kind of patterns do you see in the data?
4. How can you describe in words what the table and graph represent?

Interpret the data:

1. What does the graph show you about your prediction?
2. Give specific number/measurement examples that support your statement
3. How do the patterns or trends that you see in the graph relate to other things you know?

My hypothesis (was or was not) supported by my data.

Another question I would like to investigate is:

Be sure to start the question with “what”, “how”, or “which”.

EXAMPLE: What is the effect of the _____ (I.V.) _____ on the _____ (D.V.) _____ ? or

How does the _____ (I.V.) _____ affect the _____ (D.V.) _____ ?
